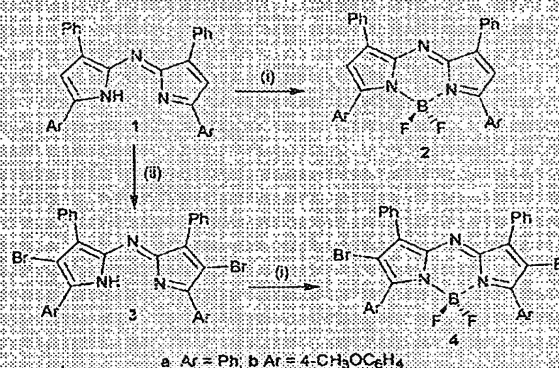
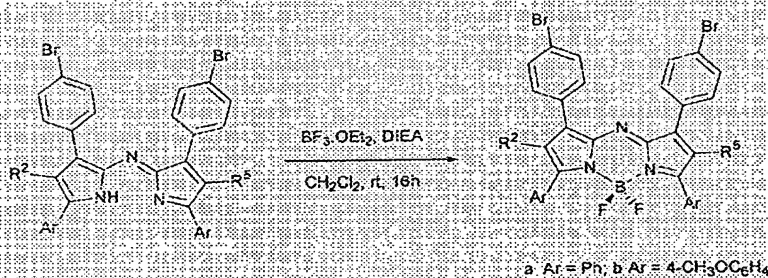


Fig. 1  
Reaction Scheme

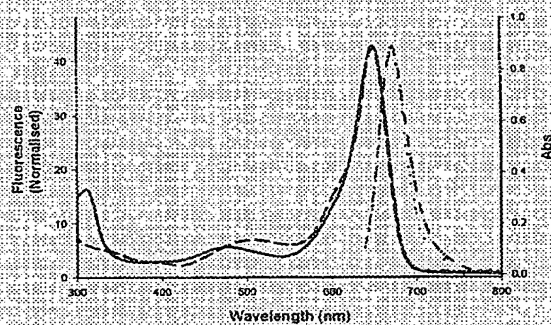


(i)  $\text{BF}_3 \cdot \text{OEt}_2$ , DIEA,  $\text{CH}_2\text{Cl}_2$ , rt, 16 h.

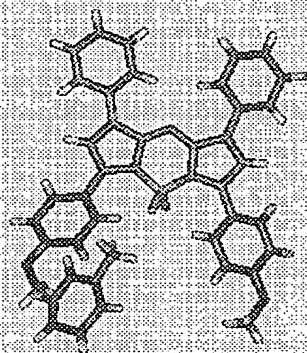
(ii)  $\text{Br}_2$ , toluene, rt, 2 h.



**Fig. 2** Normalised absorption (—) and emission spectra (.....) of **2a** and electronic absorption (- - -) and fluorescence spectra (---) of **4a** in  $\text{CHCl}_3$  at room temperature.

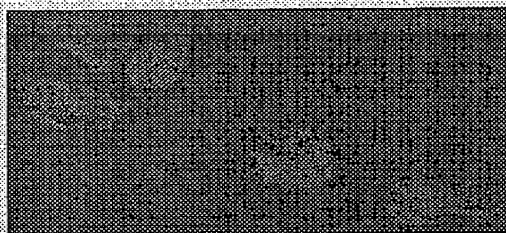


**Fig. 3** X-Ray crystal structure of **2b**, crystallised from toluene/methanol bilayer (co-crystallised with molecule of toluene).





**Fig. 4** Cellular localisation of 2a (light grey colour) in HeLa cancer cells visualised with fluorescent microscopy (darker grey area is the cell nucleus).



**Fig. 5** Cellular localisation of 2a in HeLa cancer cells; nucleus is co-stained with DAPI (blue) and cytoplasmic localisation of 2a (red).

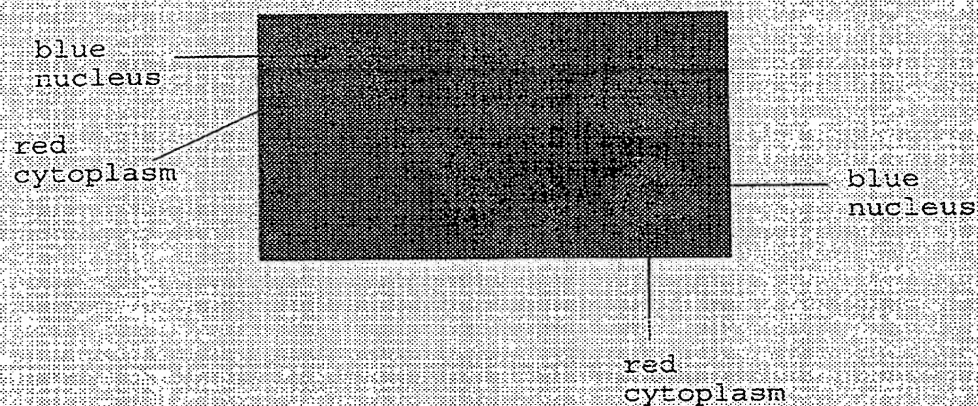


Fig. 6a:

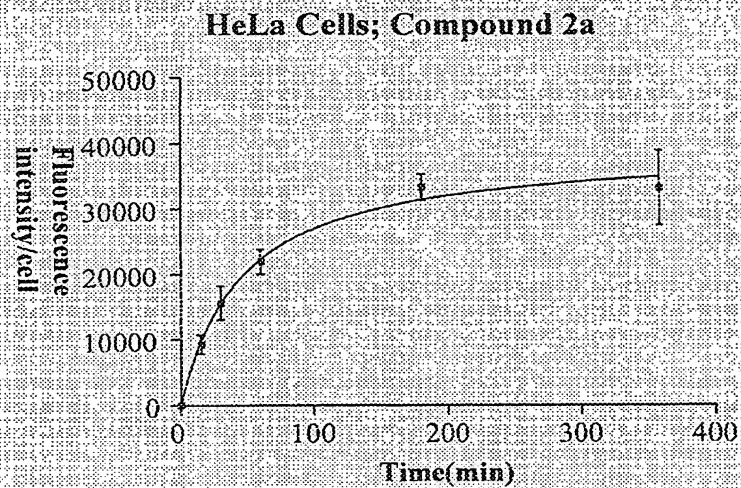


Fig. 6b:

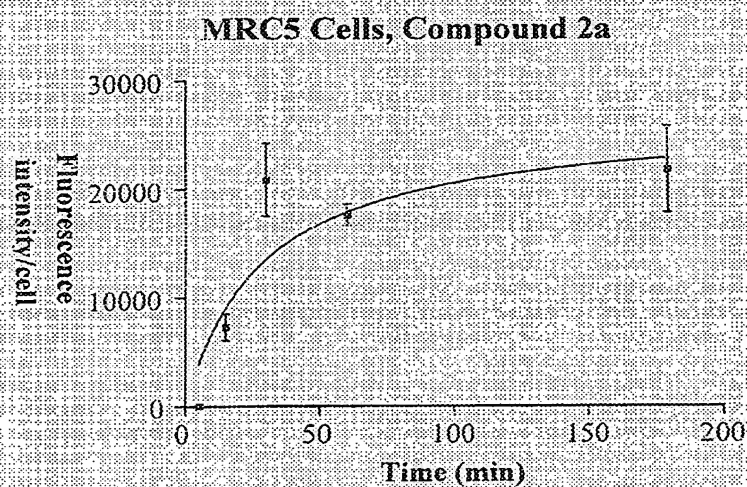




Fig. 7:

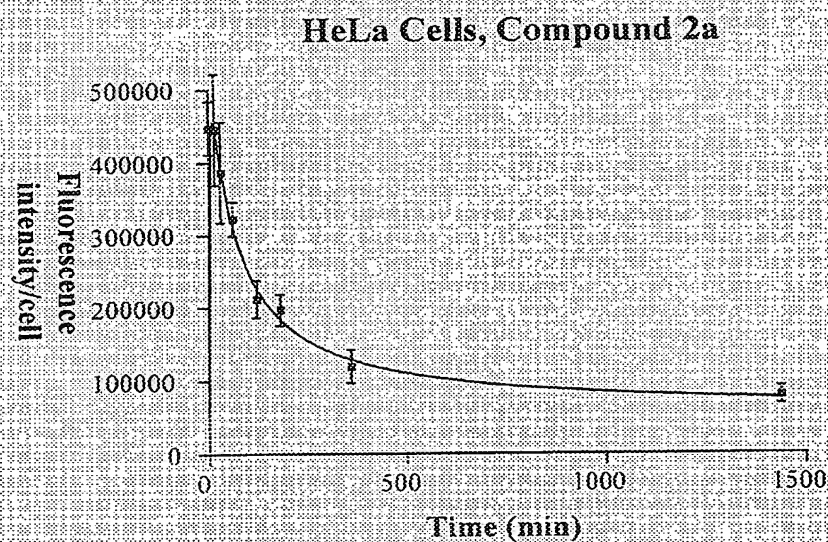


Fig 8. Dose Response Curve for 2a

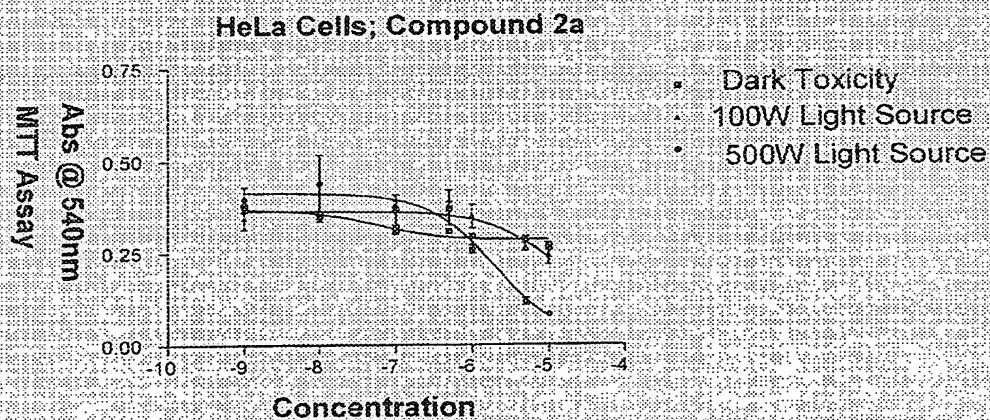
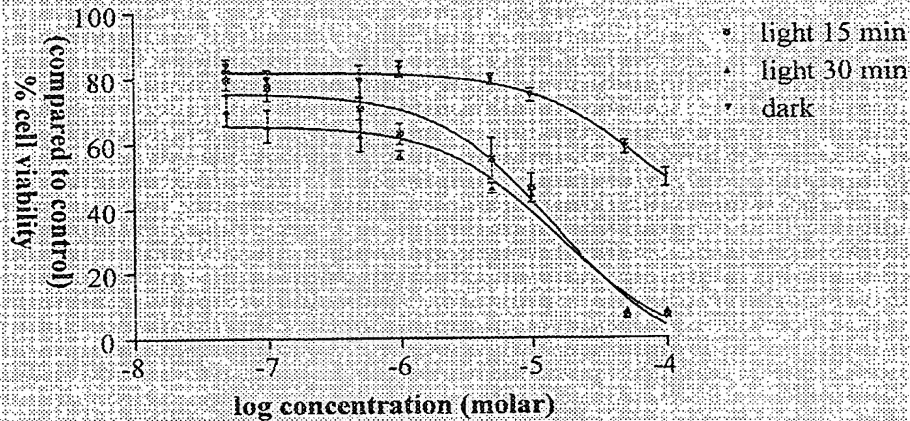


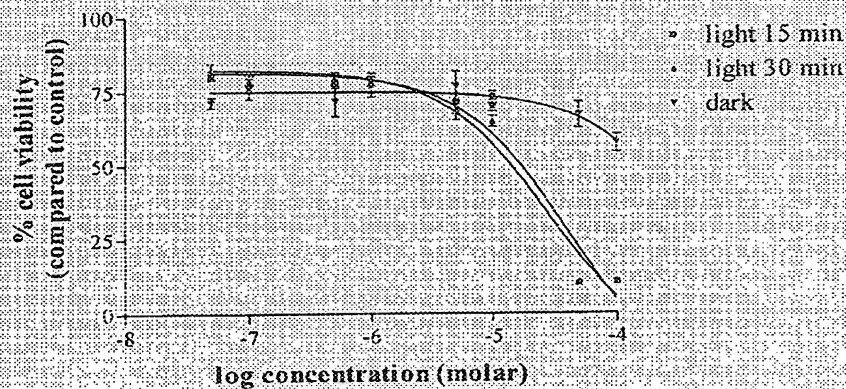
Fig. 9:

## HeLa: Haematoporphyrin



- Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)

Fig. 10:

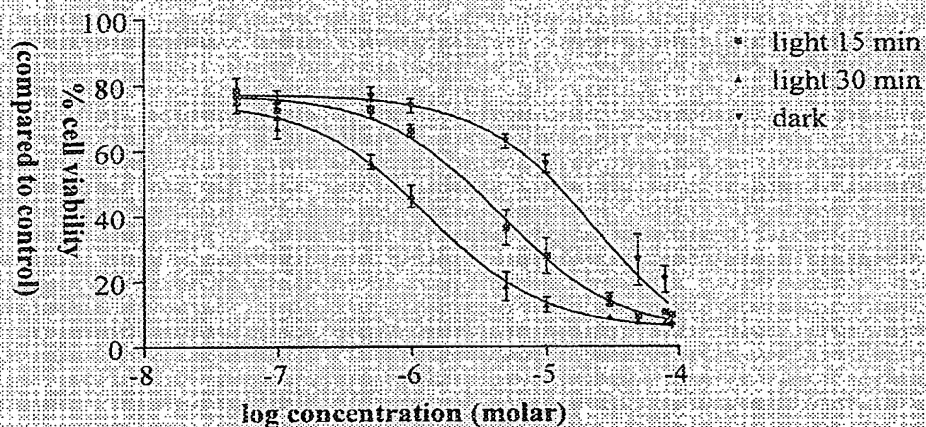
MRC5: Haematoporphyrin (24 hr),  
500 W light, MTT after 48 hrs

- Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)



Fig. 11

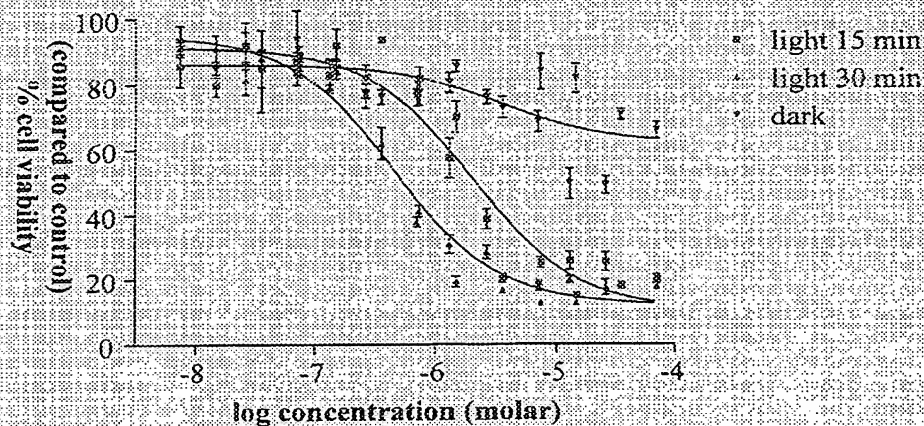
## HeLa: Compound 2a



- ◀ Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)

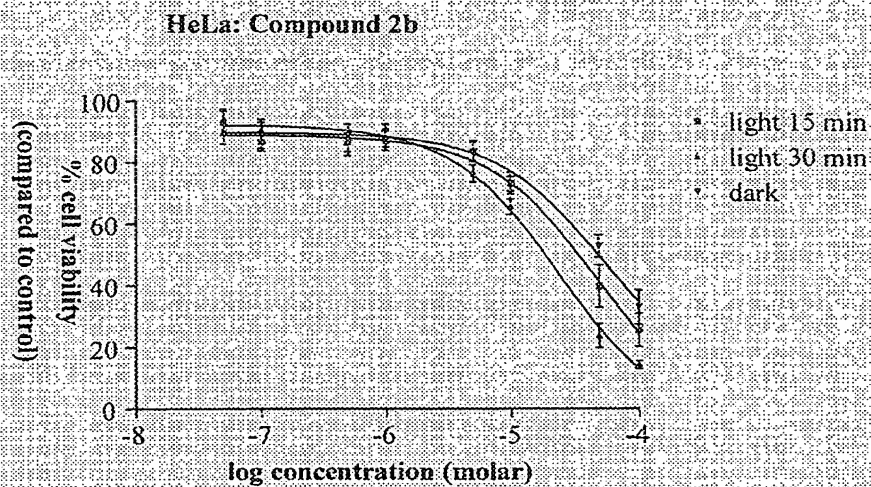
Fig. 12:

## MRC5: Compound 2a



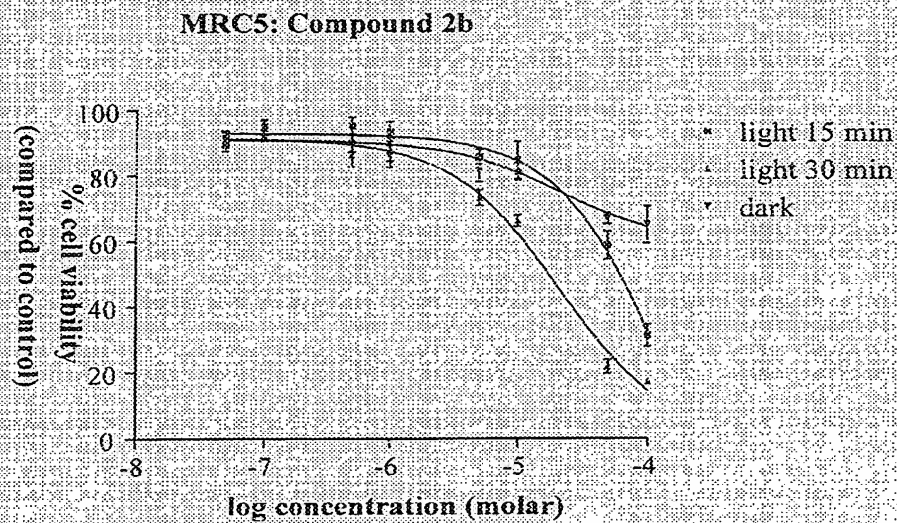
- ◀ Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)

Fig. 13:



- ▼ Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)

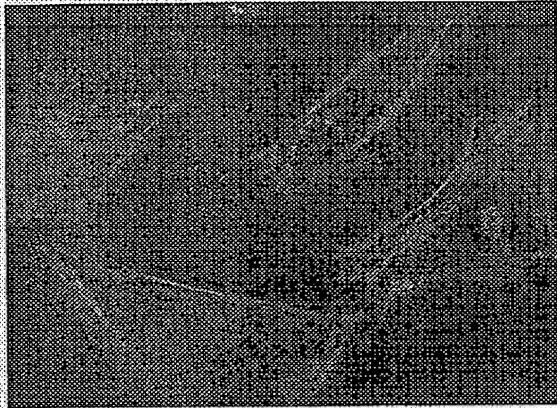
Fig. 14:



- ▼ Exposure to 0 J/cm<sup>2</sup> light (no light)
- Exposure to 8 J/cm<sup>2</sup> light (15 mins from a 500W light source)
- ▲ Exposure to 16 J/cm<sup>2</sup> light (30 mins from a 500W light source)



**Fig. 15:** Cell Toxicity following administration of 2a



**Fig. 16:**

Cell Toxicity following administration of 2a and a light dose

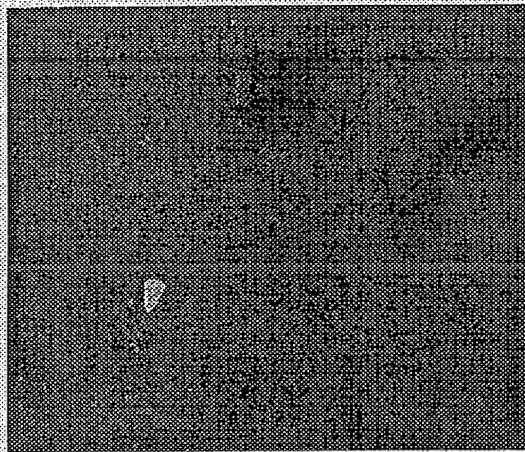
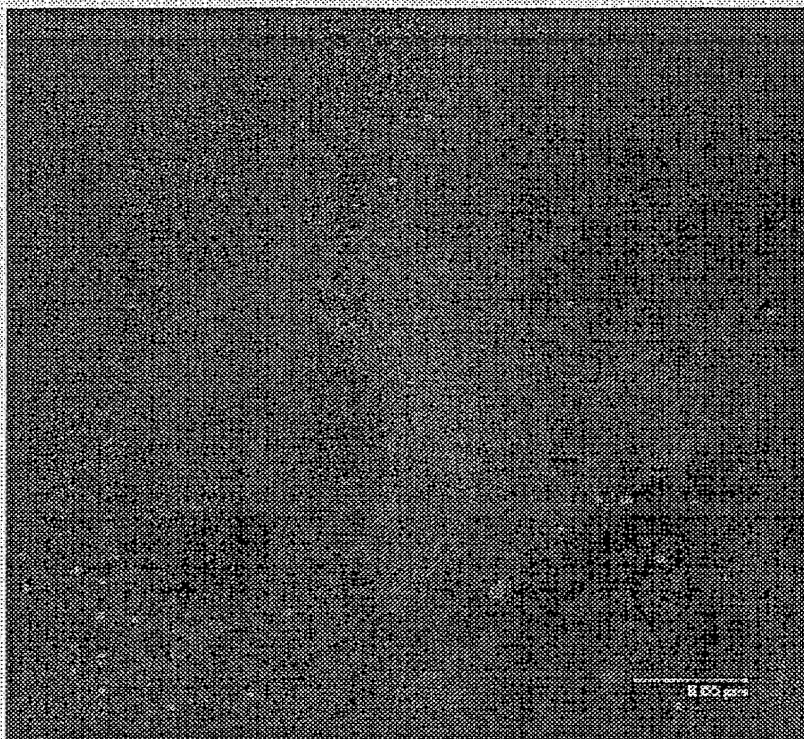


Fig. 17:

Confocal Microscope Image of Subcellular Localisation of Compound 2a (red) showing diffuse and punctuated subcellular localisation.

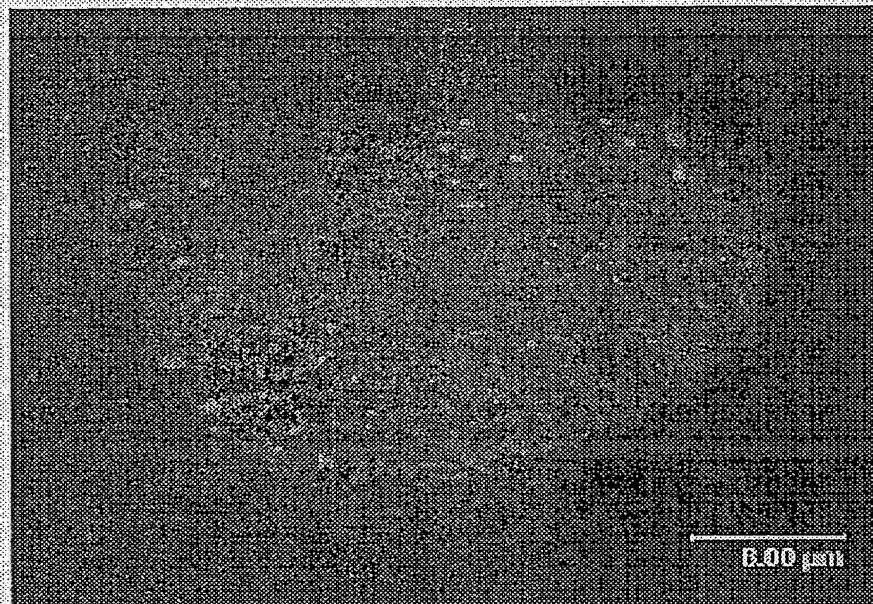




10/508754

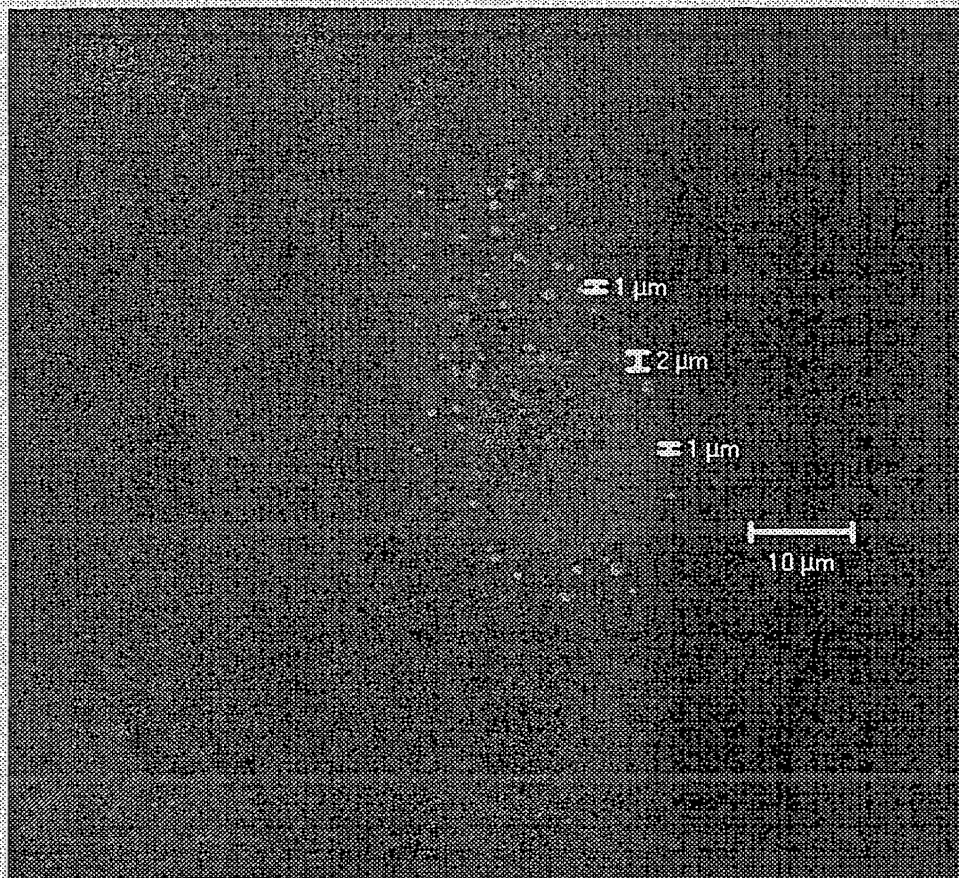
Fig. 18:

Confocal Microscope Image of Subcellular Localisation of Compound 2a (red) in HeLa Cells with a Sytox green nuclear co-stain.



**Fig. 19:**  
Identification of punctuated localisation.

Confocal Microscope Image of Subcellular Localisation of Compound **2a** (red) in HeLa Cells with a DAPI (blue) nuclear co-stain.





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